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Tests With Three Insecticides Described in USDA Report:

Tests in which diatomaceous earth was compared with two widely used chemical insecticides for control of insects in stored wheat are described in a marketing research report released today by the U.S. Department of Agriculture.

Diatomaceous earth is an inert powder composed of finely ground fossils of prehistoric aquatic micro-organisms called diatoms. This fossil material is mined in many parts of the world.

Inert dusts have been used in various forms for centuries in attempts to control insects. The dust does not poison insects; some studies indicate it affects the insect's protective wax coating and causes death by dehydration.

The two chemicals used in the tests, conducted by entomologist Delmon W. La Hue of USDA's Agricultural Research Service, were malathion and synergized pyrethrum (pyrethrum combined with another chemical to make it more effective).

Diatomaceous earth was less effective than malathion but more effective than synergized pyrethrum under laboratory conditions. Additional tests are now being conducted under commercial conditions to determine the effectiveness of diatomaceous earth and other inert dusts in controlling storage insects. Other facets of practical use will also be investigated.

In the preliminary laboratory tests, hard red winter wheat, in four-bushel bins, was subjected to heavy infestations of five kinds of grain insects. The treatments were evaluated on the basis of their repellent properties, insect numbers, and kernel damage after 12 months' storage.

Aside from further questions about the insecticidal properties of diatomaceous earth, there are several other questions as to whether it is presently suitable for commercial application. Treated grain may bring a lower price because samples have a lower test weight.

The treatment also has adverse physical effects on the grain that are disadvantages in both domestic and foreign trade. For example, treated grain has decreased "flowability," which slows down the handling rate. The grain also has a dull appearance.

Details of the preliminary tests are given in Marketing Research Report No. 726, "Evaluation of Malathion, Synergized Pyrethrum, and Diatomaceous Earth as Wheat Protectants . . . in Small Bins." Free copies may be obtained on postcard request to the Office of Information, U. S. Department of Agriculture, Washington, D.C. 20250.
